

# 2013

## BRIDGE CONDITION REPORT

City, County, Railroad and Private Bridges



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Bridges are essential to Cincinnati's transportation network, linking roadways and communities. Timely maintenance is critically important for the safety and welfare of the traveling public. The Department of Transportation and Engineering (DOTE) is the city agency primarily responsible for inspecting, maintaining, and improving the transportation system within the City of Cincinnati. The Bridge Program is the specific program within DOTE charged with the responsibility of maintaining the bridges within this transportation system. The ODOT Bridge Inspection Manual defines a bridge as "Any structure, including supports, of 10 ft or more clear span or 10 feet or more in diameter on, above, or below a highway."

**In conformance with state law, every bridge in Cincinnati is inspected on an annual basis.** Following the completion of each annual bridge inspection cycle, this report is issued by DOTE to inform City Council of the condition of the bridges in Cincinnati. This report also functions as an annual update to inform City Council on how the funds appropriated to the Bridge Program are being utilized.

Bridges that are part of the Interstate and State Highway Systems, including most City streets and rail lines over these routes, are inspected and maintained by ODOT. Consequently, DOTE Bridge Program personnel do not inspect these bridges and the inspection reports for these structures are not included in this report. Excepting interstate highway bridges and bridges carrying state or federal routes which are inspected by the Ohio Department of Transportation (ODOT), DOTE Bridge Program personnel annually inspect every

bridge in Cincinnati that supports a public roadway or crosses over a public roadway. These inspections are performed in accordance with the guidelines specified in the ODOT Bridge Inspection Manual.

### **The objectives of these inspections are to:**

1. Provide a current information base on the condition of bridges within Cincinnati so that maintenance, repair, and replacement projects can be programmed efficiently.
2. Ensure that the structures continue to satisfy present service and safety requirements.
3. Determine the need for establishing or revisiting weight restrictions on bridges.
4. Determine and locate the extent of any structural weakness or damage so that appropriate corrective actions can be taken to ensure public safety.
5. Satisfy state and federal regulations.



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## 2013 BRIDGE INSPECTION CYCLE

During the 2013 inspection season (which began in January of 2013 and was concluded in January of 2014), DOTE Bridge Program personnel inspected a total of 224 bridges.

**Based upon maintenance responsibility, these 224 bridges are divided into the following seven categories:**

**1. City (DOTE) Bridges • 65 bridges:** Vehicular and pedestrian bridges owned by the City and maintained by DOTE, 19 of which are pedestrian only structures.

**2. County Bridges • 25 bridges:** Vehicular bridges within City limits that support improved roads which are of general and public utility running into or through Cincinnati. By contractual agreement with Hamilton County, DOTE maintains these bridges. Hamilton County funds the work performed on these bridges.

**3. Ft. Washington Way Bridges • 5 bridges:** Bridges over Ft. Washington Way constructed with the Ft. Washington Way reconstruction project. DOTE shares maintenance responsibility for these bridges with ODOT.

**4. City (Skywalk) Bridges • 16 bridges:** Central Business District pedestrian bridges on the skywalk system owned by the City. The Department of Public Services and property owners adjacent to the bridges maintain these structures. Generally, DOTE is responsible for the major rehabilitation of these bridges.

**5. City (Other) Bridges • 12 bridges:** Unique City owned structures located on, over, or under a roadway that technically qualify as bridges. Various City agencies including: Stormwater Management Utility and the Park Board maintain these bridges.

**6. Railroad Bridges • 50 bridges:** Railroad bridges that cross over or under public roadways. CSXT, RailAmerica, Norfolk-Southern, and SORTA own and maintain these bridges.

**7. Private Bridges • 51 bridges:** Mostly privately owned utility bridges that cross over public roadways. The applicable private owners maintain these bridges.



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The goal of the Bridge Program is to preserve the structural integrity of all bridges that DOTE maintains so that they are safe for the traveling public. DOTE established the following performance measures to track progress towards accomplishing this objective.

1. Bridge Program personnel will annually inspect all bridges on, over, or under public streets within the City of Cincinnati (excluding bridges inspected by ODOT) and submit this annual bridge condition report, in compliance with the Ohio Revised Code, Section 723.54.

*During the 2013 bridge inspection cycle, DOTE bridge inspection personnel inspected all 224 bridges requiring inspection. The results of those inspections are compiled in this report.*

2. Bridge Program personnel will develop, request funding, program, and manage bridge maintenance, repair, and replacement work so as to maintain a Weighted Average Bridge Rating of 6 or better for bridges maintained by the Department of Transportation and Engineering. A bridge General Appraisal rating of 6 represents a “Satisfactory” condition. The Weighted Average Bridge Rating is explained on [page 9](#).

*As identified in this report, the present Weighted Average Bridge Rating for City (DOTE) bridges is 7.08.*

3. Bridge Program personnel will develop, request funding, program, and manage bridge maintenance, repair, and replacement work so that no less than 95% of City (DOTE) bridges are open with no load restrictions.

*As identified in this report, 100% of all City (DOTE) bridges are open with no load restrictions.*



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### BRIDGE CONDITIONS

The individual bridge ratings for all 65 City (DOTE) bridges and all 25 County bridges are shown in tabular fashion [here](#).

A summary of the bridge ratings for all 224 inspected bridges is shown in tabular form [here](#).

The Weighted Average Bridge Rating for both City (DOTE) bridges and County bridges from 1987 to 2013 is shown in graphic form [here](#).



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## CHANGE IN AVG. BRIDGE CONDITIONS OVER THE PAST YEAR

### CITY (DOTE)

The Weighted Average Bridge Rating for City (DOTE) Bridges remained constant over the past year at a level of 7.08 despite the following seven changes:

#### 1. Bramble Ave. Bridge over Little Duck Creek

was reduced from 8 (very good condition) to 7 (good condition).

**2. Central Parkway Pedestrian Overhead north of Clifton Hills Ave.** with a former condition rating of 6 (satisfactory condition) was removed as part of the I-75 widening project.

**3. Coliseum Pedestrian Bridge from Taylor Southgate Bridge** was reduced from 8 (very good condition) to 7 (good condition).

**4. Kennedy Ave. Bridge over Duck Creek** was added to the inventory as part of the Kennedy Connector Project with a condition rating of 8 (very good condition).

**5. Kennedy Ave. Bridge over SORTA/IORY** was added to the inventory as part of the Kennedy Connector Project with a condition rating of 8 (very good condition).

**6. Park Ave. Bridge over Kemper Lane** was reduced from 7 (good condition) to 6 (satisfactory condition).

**7. Stillwell Ave. Bridge over Amberley Creek** was reduced from a 6 (satisfactory condition) to 5 (fair condition).

### COUNTY

The change in the Weighted Average Bridge Rating for County Bridges that occurred over the past year (from 6.26 in 2012 to 6.27 in 2013) was the cumulative result of the following two changes:

**1. The Center Hill Bridge over the Mill Creek**, former condition rating of 4 (poor condition) was removed and the replacement bridge which is under construction is scheduled to be opened in 2014. The condition rating for the new bridge will be added to the inventory in 2014.

**2. Galbraith Road Bridge over Anthony Wayne Avenue** was reduced from 6 (satisfactory condition) to 5 (fair condition).

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The single bridge rated in “Imminent Failure” condition (condition rating of 1) was the Old Red Bank Road Bridge over Indiana and Ohio Railway (IORY). This bridge, owned by IORY, was removed in May, 2013. The bridge had been closed to vehicular traffic since 1997 and to pedestrian traffic since 2005.

The seven bridges rated in “Serious” condition (condition rating of 3), and eighteen bridges rated in “Poor” condition (condition rating of 4), shown in the table at the top of [page 10](#) are owned and maintained by either railroad companies, private owners, or other City agencies. The conditions of these bridges have been called to the attention of their respective owners.

The three County bridges rated in “Poor” condition (condition rating of 4) are the Kennedy Avenue Bridge over Conrail, the Marburg Avenue Bridge over Norfolk Southern Railroad, and the Western Hills Viaduct.

Outside federal funding has been secured for the replacement of the Marburg Avenue Bridge and plans are being developed. Construction is expected to begin in 2016 when the federal funding becomes available.

Replacement plans for the Kennedy Avenue Bridge are being developed by DOTE personnel and outside federal funding has been secured. The repair work is scheduled to begin in 2018 when federal funding becomes available.

The only City owned bridge rated in “Poor” condition is the Central Parkway Pedestrian Bridge Overhead at Music Hall. This bridge is owned by the City of Cincinnati’s Parking Facilities. Due to the bridge’s continued deteriorating condition, Parking Facilities

was required to implement two separate interim structural repairs over the past 7 years. These interim repairs were necessary to maintain the safe continued use of the bridge. Parking Facilities is now working with City Leaders to determine if this pedestrian bridge should be removed or undergo a major rehabilitation. Rehabilitation costs have been estimated at \$1.5 million while removal costs (which include some other nearby elevated structures) are estimated to be \$900K. As a result, Parking Facilities is developing a capital budget (FY16 and FY17) that reflects these potential expenditures. Until funds are available for a removal/rehabilitation, interim repairs will be implemented as needed to keep the bridge safe for continued use.

Preliminary engineering has begun for the replacement of the Western Hills Viaduct. Additional information on the Western Hills Viaduct can be found [here](#).



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## 2013 INDIVIDUAL BRIDGE RATINGS SUMMARY

*Number of Bridges: 2012 ▶ 2013*

	City DOTE	County	Ft. Washington Way	City Skywalk	City Other	Railroad	Private	TOTAL
9 • Excellent	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 1	0 ▶ 1
8 • Very Good	24 ▶ 24	7 ▶ 7	5 ▶ 5	6 ▶ 7	0 ▶ 1	1 ▶ 2	14 ▶ 12	57 ▶ 58
7 • Good	24 ▶ 25	8 ▶ 8	0 ▶ 0	9 ▶ 7	8 ▶ 7	5 ▶ 6	13 ▶ 15	67 ▶ 68
6 • Satisfactory	10 ▶ 9	5 ▶ 4	0 ▶ 0	2 ▶ 2	2 ▶ 3	16 ▶ 16	13 ▶ 13	48 ▶ 47
5 • Fair	6 ▶ 7	2 ▶ 3	0 ▶ 0	0 ▶ 0	1 ▶ 0	7 ▶ 6	7 ▶ 6	23 ▶ 22
4 • Poor	0 ▶ 0	4 ▶ 3	0 ▶ 0	0 ▶ 0	1 ▶ 1	15 ▶ 14	3 ▶ 3	23 ▶ 21
3 • Serious	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	6 ▶ 6	1 ▶ 1	7 ▶ 7
2 • Critical	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0
1 • Imminent Failure	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	1 ▶ 0	0 ▶ 0	1 ▶ 0
0 • Failed	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0	0 ▶ 0
<b>Total</b>	<b>64 ▶ 65</b>	<b>26 ▶ 25</b>	<b>5 ▶ 5</b>	<b>17 ▶ 16</b>	<b>12 ▶ 12</b>	<b>51 ▶ 50</b>	<b>51 ▶ 51</b>	<b>226 ▶ 224</b>

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## WEIGHTED AVERAGE BRIDGE RATING

The Weighted Average Bridge Rating is a calculated value used to monitor the performance and communicate the effectiveness of the Bridge Program. The Weighted Average Bridge Rating is an adjusted average of the overall bridge condition ratings that accounts for the importance of the bridge as determined by its size. The weighted average is calculated using a size factor multiplier based on the deck area of the bridge as follows:

Size Factor Multiplier	Deck Area (ft <sup>2</sup> )
1	Under 5,000
2	5,000-10,000
3	10,001-20,000
4	20,001-40,000
5	Over 40,00

By using the size factor, a bridge with a deck area of over 40,000 square feet will have five times the effect on the weighted average than a bridge with a deck area of under 5,000 square feet. Therefore, the Weighted Average Bridge Rating will be affected more by larger bridges which are typically more vital to the public and require more funds for maintenance, repair, and replacement.

The Weighted Average Bridge Rating was developed as a compromise between using no size factor (where the condition rating of single pedestrian bridge would effect the average bridge rating as much as the condition rating of a much larger bridge, like the Western Hills Viaduct) and using a square foot size factor (where the condition rating of the larger viaducts would completely dominate the average bridge rating). Over the last 25 years, DOTE has used the Weighted Average Bridge Rating as an effective tool to prioritize and schedule repairs to all bridges regardless of their size.



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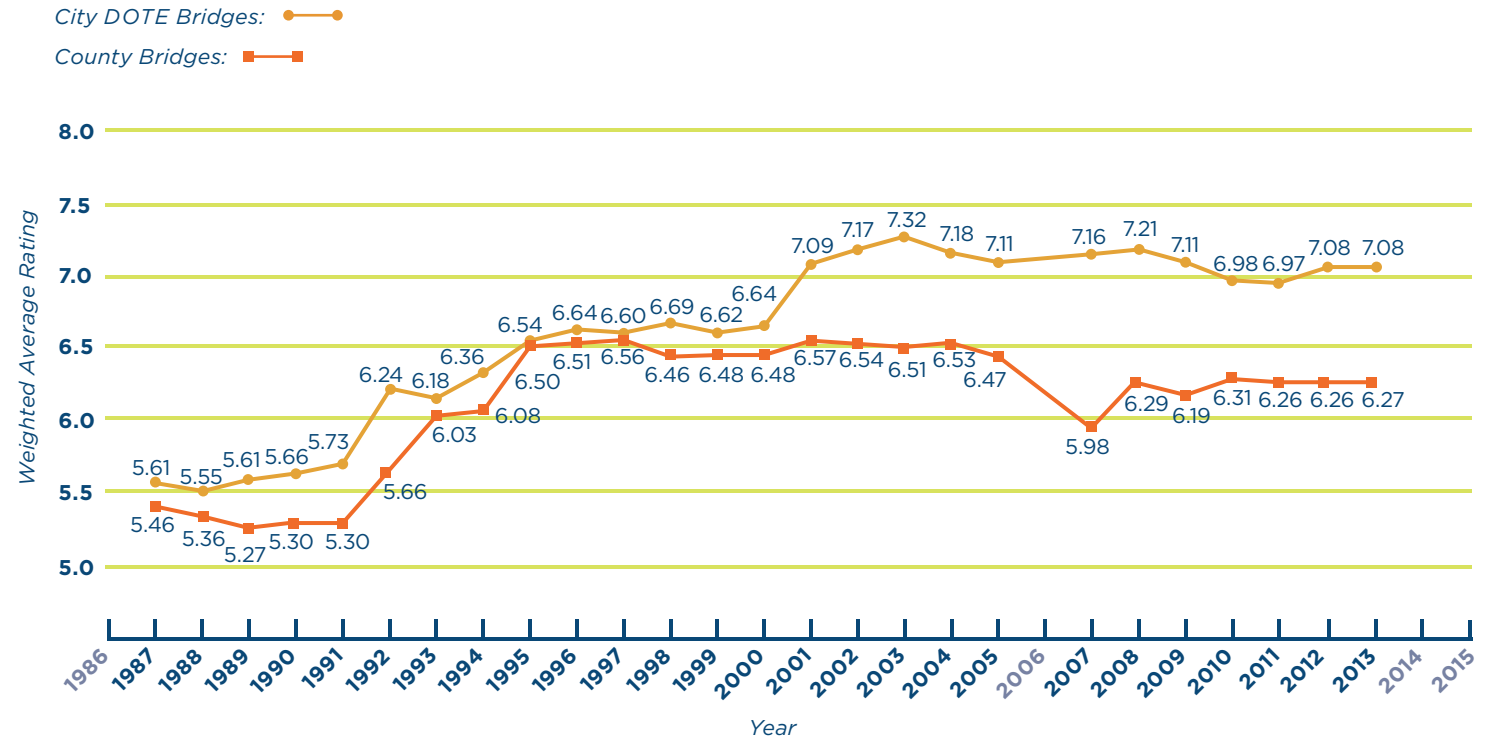
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Bridge Name	Structural File No.	Deck Area (ft²)	Year Built	Ratings	
				2012	2013
Beekman Street Pedestrian Overhead at Elmore	3160068	1,035	1970	7	7
Bramble Avenue Bridge over Little Duck Creek	3160556	2,565	1931	8	7
Burns Street Ramp over Railroads, West of Eighth Street Viaduct	3160270	3,321	2009	8	8
Celestial Street Pedestrian Bridge over Columbia Parkway	3103455	1,320	1938	7	7
Central Incinerator Approach Bridge over Mill Creek	3160610	9,019	1953	7	7
Central Parkway over Rapid Transit Tubes S. of Hopple Street	3199924	18,711	1924	6	6
Central Parkway over Rapid Transit Tubes - Walnut to Draper	3199937	422,280	1922	5	5
Central Parkway Pedestrian Overhead N. of Clifton Hills Avenue	3111342	1,806	1958	6	
Coliseum Pedestrian Bridge from Taylor Southgate Bridge	3199928	1,000	1995	8	7
Coliseum Pedestrian Bridge over Taylor Southgate Bridge	3101355	11,300	1975	7	7
Coliseum/Stadium Plaza Overhead over Broadway (Platform A)	3101940	38,525	1975	7	7
Dalton Avenue under C.U.T. Approach Drive	3160017	25,248	1931	7	7
Dana Avenue Pedestrian Bridge North of Madison Road	3161455	3,468	1973	7	7
Dreman Avenue Bridge over West Fork Channel	3160432	3,693	1999	8	8
Elm Street Cable Stayed Pedestrian Bridge over FWW - East Side	3106179	2,845	2000	8	8
Elm Street Cable Stayed Pedestrian Bridge over FWW - West Side	3106063	2,845	2000	8	8

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Bridge Name	Structural File No.	Deck Area (ft <sup>2</sup> )	Year Built	Ratings	
				2012	2013
Elm Street over Pete Rose Way and Parking Lots	3161978	36,960	2000	7	7
Elmhurst Street Pedestrian Bridge over Torrence Parkway	3162494	1,155	1950	5	5
Erie Avenue Bridge over Duck Creek	3160882	4,136	1900	7	7
Erie Avenue Bridge over N & W Railroad	3160602	1,955	2001	7	7
Erie Avenue Bridge over Red Bank Road	3160998	12,800	1943	7	7
Erie Avenue Bridge over SORTA	3160939	12,800	1943	7	7
Este Avenue Extension Culvert at Ridgewood Arsenal	3161412	2,250	1990	7	7
Freedom Way West over Garage between Elm and Race	3165280	22,922	2011	8	8
Freedom Way Center over Garage btwn Race and Rosa Parks St.	3165337	34,604	2011	8	8
Freedom Way E. over Parking Garage btwn Walnut & Main Streets	3165396	34,869	2011	8	8
Gest Street Bridge over CIND Railroad	3161277	2,195	1919	7	7
Gest Street Bridge over Mill Creek	3161749	4,373	1997	8	8
Gest Street Ramp E. of Linn Street	3161358	3,049	1963	6	6
Gest Street Ramp W. of Linn Street	3161366	3,049	1963	6	6
Gilbert Ave. Pedestrian Overhead S of Court Street	3100774	807	1970	8	8
Hutton Avenue Pedestrian Bridge over Conrail	3199920	1,150	1930	6	6

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				2012	2013
Ida Street Viaduct over Wareham	3160076	14,356	1931	6	6
Kennedy Connector Bridge over Duck Creek	3162958	11,031	2013		8
Kennedy Connector Bridge over SORTA/IORY	3163008	23,432	2013		8
Kenton Street Bridge over Florence	3160130	13,275	1998	8	8
Lincoln Avenue Bridge over Open Land	3161838	16,500	1953	7	7
Madison Road Pedestrian Bridge East of CSX	3161935	773	1959	5	5
Madison Road Pedestrian Bridge West of CSX	3161889	774	1959	5	5
Main Street Cable Stayed Ped. Bridge over FWW - East Side	3106462	2,845	2000	8	8
Main Street Cable Stayed Ped. Bridge over FWW - West Side	3106403	2,845	2000	8	8
Main Street Bridge over Parking Garage	3161900	27,730	2004	8	8
Mehring Way Pedestrian Overhead Bridge to Coliseum	3199927	13,262	1975	7	7
Mitchell Avenue Bridge over Mill Creek	3160440	14,347	1959	6	6
Monastery Street Bridge over Open Land	3161404	11,324	1984	6	6
Park Avenue Bridge over Kemper	3160777	30,680	1917	7	6
Powers Street Bridge over West Fork Channel	3160904	4,799	2001	8	8
Race Street Bridge over Pete Rose Way and Parking Lots	3162036	20,724	2000	8	8

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				2012	2013
Railroad (Abandoned) over I-71 North of Elsinore	3106748	5,440	1970	6	6
Roe Street Bridge over Little Duck Creek	3161005	1,692	1930	7	7
Rosslyn Drive Bridge over Duck Creek	3162338	2,820	1943	7	7
Second Street Connector from Clay Wade Bailey (Ramp D)	3160661	25,617	2001	8	8
Second Street over Transit Center - East End	3160866	61,812	2001	5	5
Second Street over Transit Center - Elm to Main Streets	3160696	178,641	2001	8	8
Second Street over Transit Center - West Approach	3160688	27,302	2001	8	8
Settle Street Bridge over Little Duck Creek	3161188	1,888	1996	7	7
Sixth Street Expressway Pedestrian Bridge West of Harriet	3102831	1,251	1965	7	7
Sonoma Court Culvert	3162753	1,474	2004	8	8
Southside Avenue over Conrail/CSX	3161528	5,263	1992	8	8
Spring Lawn Avenue Bridge over Branch of Ludlow Run	3161285	434	1925	5	5
Stillwell Road Bridge over Amberley Creek (N. of Summit)	3161331	840	1954	6	5
Victory Parkway Pedestrian Overhead South of I-71	3161374	2,090	1972	7	7
Vine Street Bridge over Parking Garage (Rosa Parks)	3161781	22,214	2003	8	8
Walnut Street Bridge over Parking Garage	3162877	22,185	2004	8	8

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				2012	2013
West Eighth Street Bridge over Fairbanks Avenue	3162702	8,568	1955	7	7
West Eighth Street Bridge over Woodlawn Avenue	3162656	4,704	1955	7	7
		Total Deck Area (ft <sup>2</sup> )	Avg. Year of Construction	Avg. Weighted Rating	
		1,309,181	1973	7.08	7.08

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				2012	2013
Anthony Wayne Avenue Bridge over the Mill Creek	3136388	6,452	1992	8	8
Beekman Street Bridge over West Fork Channel	3136426	3,256	1912	7	7
Berkshire Lane Culvert 400 Feet North of Beechmont	3136450	1,767	1986	7	7
Center Hill Avenue Bridge over the Mill Creek	3136442	5,775	1929	4	
Clifton Avenue Bridge over the Mill Creek	3136353	8,729	1935	8	8
East Fork Avenue Bridge over Little Duck Creek	3136574	1,512	1952	5	5
Eighth Street Bridge over Railroads West of Eighth Street Viaduct	3136639	7,110	2008	8	8
Eighth Street Viaduct over the Mill Creek, Evans and Railroad	3136582	190,610	1929	6	6
Galbraith Road Bridge over Anthony Wayne Avenue	3136612	20,808	1949	6	5
Hopple Street Viaduct	3136337	115,560	1916	6	6
Kennedy Avenue Bridge over Conrail	3136671	9,723	1933	4	4
Madison Road Bridge over Duck Creek East of Ridge	3136728	2,352	1929	7	7
Marburg Avenue over Norfolk Southern Railroad	3136744	6,156	1932	4	4
North Bend Road over Kirby Road	3136795	6,776	1951	5	5
North Bend Road over the Mill Creek	3137139	8,404	1995	8	8
Plainville Road Arch over Little Duck Creek	3136817	1,188	1915	6	6

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Bridge Name	Structural File No.	Deck Area (ft <sup>2</sup> )	Year Built	Ratings	
				2012 ▶	2013
Red Bank Expressway Culvert over Deerfield Channel	3136841	3,570	1969	6 ▶	6
Red Bank Expressway Culvert over Deerfield Channel at Madison	3136868	28,000	1970	7 ▶	7
Seymour Avenue Bridge over the Mill Creek	3136922	8,326	1994	8 ▶	8
Spring Grove Avenue Bridge over Mill Creek East of Kings Run	3137074	13,448	1993	7 ▶	7
Spring Grove Avenue Bridge over Mill Creek South of Colerain	3137031	17,365	1970	7 ▶	7
West Fork Road Bridge over Tributary of West Fork Channel	3137155	2,755	2000	8 ▶	8
W. Fork Rd Bridge over West Fork Channel - 2nd West of Montana	3137147	3,143	2000	8 ▶	8
West Fork Road Bridge over West Fork Channel at Montana	3137090	3,476	1928	7 ▶	7
Western Hills Viaduct	3137082	221,920	1931	4 ▶	4
Wooster Road Bridge over Duck Creek	3137112	5,816	1961	7 ▶	7
		Total Deck Area (ft <sup>2</sup> )	Avg. Year of Construction	Avg. Weighted Rating	
		698,222	1958	6.26 ▶	6.27

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**CITY DEPARTMENT OF TRANSPORTATION  
AND ENGINEERING (DOTE) BRIDGES**

Maintenance, repair, and replacement of City (DOTE) bridges is funded with both operating and capital funds. City funds are leveraged, when possible, with state and federal funds.

DOTE's goals are to maintain a weighted average bridge rating of 6, "Satisfactory" condition, or better and to have at least 95% of City (DOTE) bridges open without load restrictions. The Smale Infrastructure Commission Report recommended an annual investment increase of \$2,000,000 to maintain the city's bridge infrastructure. This recommendation was in 1988 dollars to maintain a deck area of approximately 1,000,000 square feet. Since 1988, DOTE has been maintaining a steadily increasing amount of bridge deck area which at this time is over 1,310,000 square feet. Capital funding for City (DOTE) bridges in 2013/2014 was \$820,000, and capital funding for 2014/2015 is expected to be \$745,220. This current level of funding alone is insufficient and a reliance on outside funding has been and will continue to be necessary to achieve the program goals.

**COUNTY BRIDGES**

By contractual agreement with Hamilton County, the City of Cincinnati receives \$1,000,000 annually to inspect and maintain bridges that support improved roads which are of general and public utility running into or through Cincinnati. This funding level has remained constant since the initiation of the agreement in the late 1970's. As with City (DOTE) Bridges, this funding alone is insufficient and a reliance on outside funding has been and will continue to be necessary to achieve the program goals.

**LEVERAGED FUNDING SUMMARY**

DOTE continues to aggressively pursue outside funding sources to maintain Cincinnati's public infrastructure. Successful leveraging of outside funds is imperative to maintaining and improving the condition of Cincinnati's bridges.

The following tables indicate the amount of outside funding that the City has obtained in recent years for the Bridge Program. Except for the construction of the Waldvogel Viaduct Replacement Project, a significant percentage of the obtained leveraged funding was for County bridges. Because of the generally higher traffic volumes on these bridges, the funds received from Hamilton County are more likely to be successfully leveraged with outside funding sources.

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## 1993-PRESENT LEVERAGED FUNDING SUMMARY CITY (DOTE) BRIDGE PROGRAM

Year	Bridge Name	Contract Bid Cost	% Fed	% State	% SCIP	% Local	Leveraged	Local
1993	Sixth Street Expressway (2 bridges)	\$1,555,990	75%	25%			\$1,555,990	\$0
1996	Gest Street over the Mill Creek	\$839,550			80%	20%	\$671,640	\$167,910
1997	Kenton Street over Florence	\$1,589,170			80%	20%	\$1,271,336	\$317,834
1998	Dreman Ave. Bridge over West Fork Channel	\$1,887,370			70%	30%	\$1,321,159	\$566,211
1998	Gest Street over CIND Railroad	\$552,000			55%	45%	\$303,600	\$248,400
2000	Erie Avenue Bridge over N & W Railroad	\$731,620			68%	32%	\$498,968	\$232,652
2003	Martin Drive Ramp over Columbia Pkwy (Bridge Work Only)	\$162,333		100%		0%	\$162,333	\$0
2003	Celestial Street Pedestrian Bridge (Bridge Work Only)	\$172,727		57%		43%	\$98,477	\$74,250
2003	Roadway & Aesthetic Improvements Columbia Pkwy Bridge	\$2,201,695		81%		19%	\$1,781,337	\$420,358
2006	Freeman Ave. over 6th St. Expy with 6th St. Expy	\$103,702		100%		0%	\$103,702	\$0
2007	Waldvogel Real Estate Purchase of Hilltop Property	\$5,000,000	84%			16%	\$4,196,786	\$803,214
2008	Burns Street Ramp - Replacement	\$1,205,224			17%	83%	\$204,888	\$1,000,336
2010	Waldvogel Railroad Relocation (Const. Contract)	\$6,012,400	84%			16%	\$5,035,000	\$977,400
2010	Waldvogel Real Estate Reimbursement 1	\$2,974,387	80%			20%	\$2,379,510	\$594,877
2011	Waldvogel Real Estate Reimbursement 2	\$1,419,698	80%			20%	\$1,135,758	\$283,940
2011	Waldvogel Reconstruction (Const. Contract)	\$37,632,522	78%	1%	0.14	7%	\$35,111,294	\$2,521,228
2013	Waldvogel Real Estate Reimbursement 3	\$634,261	80%			20%	\$507,409	\$126,852
<b>Total Cost</b>		<b>\$64,674,649</b>					<b>\$56,339,187</b>	<b>\$8,335,462</b>

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## 1993-PRESENT LEVERAGED FUNDING SUMMARY COUNTY BRIDGE PROGRAM

Year	Bridge Name	Contract Bid Cost	% Fed	% State	% SCIP	% Local	Leveraged	Local
1993	Columbia Parkway (2 bridges)	\$1,497,545	70%	30%			\$1,497,545	\$0
1993	River Road over Muddy Creek	\$759,740	75%	25%			\$759,740	\$0
1993	Sixth Street Expressway (10 bridges)	\$4,130,761	75%	25%			\$4,130,761	\$0
1993	Spring Grove over Mill Creek	\$2,065,260			80%	20%	\$1,652,208	\$413,052
1994	Seymour Avenue over Mill Creek	\$1,945,780	80%		20%		\$1,945,780	\$0
1994	Beechmont Avenue Viaduct	\$5,067,402	75%	25%			\$5,067,402	\$0
1995	Beekman Avenue over West Fork	\$967,222			80%	20%	\$773,778	\$193,444
1995	North Bend Road over Mill Creek	\$1,302,647	80%		20%		\$1,302,647	\$0
1993	Ludlow Avenue Viaduct	\$9,229,975	75%	25%			\$9,229,975	\$0
1997	Columbia Parkway Viaduct	\$10,900,000		100%			\$10,900,000	\$0
1999	Fort Washington Way Viaduct (3rd St. Viaduct)	\$27,208,420		100%			\$27,208,420	\$0
1999	West Fork Bridges over West Fork Channel	\$1,555,310			70%	30%	\$1,088,717	\$466,593
1999	River Road/Hillside Culvert at Bender	\$2,198,465		100%			\$2,198,465	\$0
2001	Kellogg and Salem Avenue Bridges	\$397,097		100%			\$397,097	\$0
2002	Western Hills Viaduct - West Plaza Repairs	\$161,296			90%	10%	\$145,166	\$16,130
2003	Columbia Pkwy West of Martin Dr. Ramp (Bridge Work Only)	\$3,599,019		100%			\$3,599,019	\$0
2004	Clay Wade Bailey Approach	\$1,400,000		100%			\$1,400,000	\$0
2005	Norwood Lateral over Paddock and Reading Road Bridges	\$396,755		100%			\$396,755	\$0
2006	6th Street Expressway Project (10 Bridges)	\$631,560		100%			\$631,560	\$0
2007	Columbia Pkwy over Beechmont, Linwood, Heekin & Ramp to Eastern - Deck Treatments (Bridge Work Only)	\$73,830		100%			\$73,830	\$0
2008	8th St. Viaduct and 8th St. Bridge West of 8th St. Viaduct	\$20,593,768	63%		17%	20%	\$16,475,014	\$4,118,754
2009	Clifton Avenue Bridge Superstructure Replacement	\$1,535,000			70%	30%	\$1,074,500	\$460,500
2010	Western Hills Viaduct - Upper Deck Rehabilitation	\$1,836,273			50%	50%	\$918,136	\$918,136
2012	Center Hill Avenue Bridge - Replacement	\$3,415,883			33%	67%	\$1,137,500	\$2,278,383
<b>Total Cost</b>		<b>\$102,869,007</b>					<b>\$94,004,015</b>	<b>\$8,864,992</b>

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The following summarizes major activities on City (DOTE) and County bridges that occurred in 2013 or will occur in 2014. Except as noted, DOTE staff performed plan development and construction management for these bridge projects.

### 2013/2014 CITY (DOTE) BRIDGE PROJECTS

#### 1. Second St. over Transit Center • Leak Mitigation

*City Bridge in Central Riverfront District*

This project consists of improvements to the Transit Center which will mitigate current leakage issues. The project is being implemented as a preservation measure of the structure and the appurtenances within. Plans for the work were prepared by a directed consultant. The first phase of the work was completed in 2012. The second phase began in 2013 and will continue through 2014. This work is being financed as part of the Banks project.

#### 2. Ida St. Viaduct over Wareham Dr. •

**Concrete Repairs** *City Bridge in Mt Adams*

This project consists of performing a concrete deck overlay and replacing the existing deteriorated concrete railing and sidewalks. The project was bid in February of 2014 and a contract in the amount of \$1,967,178 has been awarded. The project will be funded with City CIP bridge funds and work will commence in spring of 2014. A separate contract to make concrete repairs to the arches is expected to bid in 2015.

#### 3. Baymiller Pedestrian Bridge over Central Pkwy •

**North Span Removal** *Former City Pedestrian Bridge in OTR and West End*

This project consists of removing the remaining portions of the former pedestrian bridge. The former north abutment will be anchored into the backfill and will remain and serve as a retaining wall. The project is expected to be bid in 2014. The project will be funded with City CIP bridge funds and is expected to be approximately \$100,000.

#### 4. Fracture Critical Inspections

*City Bridges in West End and CBD*

This project consists of performing “hands on” inspections of every fracture critical member of the City owned highway bridges. Fracture Critical Inspections (FCI) were performed by City personnel in 2013 on the Gest Street Ramp bridges at Linn Street and the Second Street over Transit Center West approach. FCI for the Central Incinerator Approach bridge will be performed by a directed consultant in 2014. This project will be funded with City CIP bridge funds.

#### 5. 2014 City Bridge Maintenance Contract

*Multiple City Bridges*

This project consists of performing maintenance repair on selected City bridges. The project mainly focuses on the repair/replacement of expansion joints and sealing of bridge decks. The project will be funded with City CIP funds and is expected to be approximately \$50,000.

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## 2013/2014 COUNTY BRIDGE PROJECTS

### **1. Center Hill Bridge over the Mill Creek • Bridge Replacement Contract**

*County Bridge in Winton Hills*

This project consists of replacing the existing bridge.

This project bid in the fall of 2012. A contract was awarded in the amount of \$3,415,883 and is being funded with County MRF bridge funds and State OPWC funds. The bridge was opened to traffic in April 2014.

### **2. Western Hills Viaduct • Fracture Critical Inspection** *County Bridge in CUF and South Fairmont*

This project consists of performing a “hands on” inspection of every fracture critical member on the Western Hills Viaduct as well as inspecting selected fatigue-prone members within arm’s length distance. The inspection was performed by a directed consultant in June of 2013. The cost of \$48,934 for this project was funded with County MRF bridge funds.

### **3. Western Hills Viaduct • Trough Repairs** *County Bridge in CUF and South Fairmont*

This project consists of making repairs and removing portions of the two utility troughs cantilevered off the bottom deck of the Western Hills Viaduct. The north trough supports an active watermain and fiber optic cables. The utilities within the south trough have been removed. The project is expected to bid in 2014 following the construction of a temporary support for the watermain located within the north trough which is being funded by GCWW. This project is expected

to cost approximately \$250,000 and will be funded with County MRF bridge funds.

### **4. Kennedy Ave. Bridge • Structural Repairs** *County Bridge in Kennedy Heights*

This project consists of making repairs to the beam ends and bearings of the bridge. Plans for this project will be developed by a directed consultant and this project is expected to be bid in the summer of 2014. The project is expected to cost approximately \$150,000 and will be funded by County MRF funds.

### **5. 2014 County Bridge Maintenance Contract** *Multiple County Bridges*

This project consists of performing maintenance work on selected County bridges. The project mainly focuses on the repair/replacement of expansion joints of the Hopple Street Viaduct and North Bend Rd. Bridge over the Mill Creek as well as the sealing of the wearing surfaces of numerous County bridges. The project will be funded by County MFR funds and is expected to be \$100,000.



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## WALDVOGEL MEMORIAL VIADUCT REPLACEMENT

### City Bridge in Lower Price Hill

Removal and replacement of the Waldvogel Memorial (Sixth Street) Viaduct started in mid 2011 and is expected to be substantially complete by the end of 2014. The project consists of removing the former, deteriorated, half-mile long viaduct and replacing it with a combination of new widened roadway on grade and four new ramp bridges connecting River Road to Warsaw and Elberon Avenues. The four new ramp bridges will be owned by ODOT. Engineering plans for the viaduct replacement project were prepared by a consultant hired by the City. ODOT is managing the construction of the project and holds the construction contract with the contractor, The Great Lakes Construction Company. ODOT is also making improvements to the Sixth Street Expressway in conjunction with the viaduct replacement project. Removal of the viaduct itself started in mid October, 2012 and was completed in mid February, 2013. Additional information on the project can be found on the City's web site at: <http://www.cincinnati-oh.gov/dote/dote-projects/waldvogel-viaduct/>. A combination of Federal Discretionary, Local Major Bridge, and OKI-STP funds, State OPWC funds, Hamilton County MRF funds, and City CIP funds are being used to fund this \$38M construction project. Work on the Sixth Street Expressway east of the Mill Creek is already substantially complete. The scheduled completion date for the work west of the Mill Creek in Lower Price Hill is November 19, 2014. Work on the two Sixth Street Expressway bridges over the Mill Creek is lagging somewhat behind schedule due to complications in driving sheeting and piles in

the Mill Creek. Although ODOT is making efforts to accelerate the remaining work at this location, work at this one specific location over the Mill Creek may extend into 2015.



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## WESTERN HILLS VIADUCT REHAB/REPLACEMENT

### County Bridge in South Fairmount and CUF

Representatives from DOTE and the Hamilton County Engineers Office have selected and hired URS to perform preliminary engineering and prepare environmental documents for either the substantial rehabilitation or replacement of the Western Hills Viaduct. Hamilton County Bridge funds are being used to fund this work. Preliminary engineering work completed to date indicates that replacing the viaduct with a new, large span, double deck structure south of the existing viaduct will be the eventual preferred alternative as this is the only option that allows the project to (1) satisfy current highway design standards, (2) improve pedestrian and bicycle accessibility, (3) maintain reasonable maintenance of traffic during construction, and (4) allows for construction over the CSXT rail yard. All design work is being coordinated with ODOT's proposed Brent Spence project and MSD's proposed Lick Run Valley Conveyance System (storm water separation) project. Due to the size and complexity of the Western Hills Viaduct, it is expected that its replacement will cost approximately \$240,000,000 and as a result, substantial outside funding for the project will be needed. To date only \$3,200,000 in outside, federal funding has been secured for right-of-way acquisition and these funds are being used to start preliminary engineering right-of-way services (title reports and real estate appraisals) while preliminary design is continuing to be advanced. The first round of public involvement meetings were held in early 2012 to gather input on the public's expectations for the project. A second round of public involvement

meetings was held in late 2013 in which the pros and cons of various alignments was discussed as well as double deck vs. single deck construction. Coordination with ODOT, the railroads, and the utilities is continuous and ongoing. Additional information on the project can be found on the City's web site at: <http://www.cincinnati-oh.gov/westernhillsviaduct>. Because the Western Hills Viaduct is at the northern end of ODOT's proposed Brent Spence project, it would be beneficial for the construction of the two projects to be coordinated within the same contract. Presently, neither project has secured funding for construction.



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## Program Expenses

Carry-Over Local Funds	New Local Funds	Projects by Year Contract Awarded	Rating	Deck Area (ft <sup>2</sup> )	Estimated Total Local Proj. Cost	Fund Split <sup>1</sup>			Estimated Remaining Funds
						% Local	% Match	Outside Funding Secured	
\$3,300,000	\$745,220	<b>2014</b>							
		Bridge Inspection & Program Management	N/A		\$200,000	100%	0%	N/A	
		TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$200,000	100%	0%	N/A	
		Baymiller Bridge - North Span Removal	N/A	N/A	\$100,000	100%	0%	N/A	
		City Bridge Maintenance Contract	Various	Various	\$50,000	100%	0%	N/A	
		Ida St Viaduct - Concrete Repairs - Phase 1	6	30,680	\$2,200,000	100%	0%	N/A	
		<b>Total Expenses</b>			<b>\$2,800,000</b>				<b>\$1,245,220</b>
\$1,245,220	\$1,023,000	<b>2015</b>							
		Bridge Inspection & Program Management	N/A		\$200,000	100%	0%	N/A	
		TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$200,000	100%	0%	N/A	
		Ida St Viaduct - Concrete Repairs - Phase 2	6	30,680	\$600,000	100%	0%	N/A	
		<b>Total Expenses</b>			<b>\$1,050,000</b>				<b>\$1,218,220</b>
\$1,218,220	\$1,100,000	<b>2016</b>							
		Bridge Inspection & Program Management	N/A		\$200,000	100%	0%	N/A	
		TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$200,000	100%	0%	N/A	
		Springlawn Ave. Bridge Replacement	5	434	\$300,000	20%	80%	No	
		City Bridge Maintenance Contract	Various	Various	\$50,000	100%	0%	N/A	
		<b>Total Expenses</b>			<b>\$800,000</b>				<b>\$1,518,220</b>
\$1,518,220	\$986,000	<b>2017</b>							
		Bridge Inspection & Program Management	N/A		\$200,000	100%	0%	N/A	
		TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$200,000	100%	0%	N/A	
		Central Incinerator Bridge - Deck Replacement	7	13,192	\$650,000	100%	0%	N/A	
		<b>Total Expenses</b>			<b>\$1,100,000</b>				<b>\$1,404,220</b>
\$1,404,220		<b>2018</b>							
	\$901,000	Bridge Inspection & Program Management	N/A		\$200,000	100%	0%	N/A	
		TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$200,000	100%	0%	N/A	
		Park Ave Bridge - Concrete Overlay & Repair	6	30,680	\$600,000	20%	80%	No	
		Stillwell Rd. Brg. over Amberly Crk. - Replace.	5	840	\$400,000	20%	80%	No	
		City Bridge Maintenance Contract	Various	Various	\$50,000	100%	0%	N/A	
		<b>Total Expenses</b>			<b>\$1,500,000</b>				
\$805,220	\$901,000	<b>2019</b>							<b>\$805,220</b>
		Bridge Inspection & Program Management	N/A		\$200,000	100%	0%	N/A	
		Monetary Street Bridge - Concrete Overlay	6	11,324	\$400,000	100%	0%	N/A	
		Elmhurst Pedestrian Bridge - Replacement	5	1,155	\$650,000	100%	0%	N/A	
		TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$200,000	100%	0%	N/A	
		City Bridge Maintenance Contract	Various	Various	\$50,000	100%	0%	N/A	
		<b>Total Expenses</b>			<b>\$1,550,000</b>				<b>\$156,220</b>

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Additional leveraged funds will be pursued and will be used to supplement local funds as secured.



The projects are grouped by the year of expected bid. This plan is flexible and will be revised as necessary if future bridge inspections reveal unexpected changes in the condition of any bridge, if anticipated bridge funding amounts change, if unexpected leveraged funding sources become available or are withdrawn, if the timing of any bridge project requires adjustment to coordinate with other infrastructure improvement or development projects, or if City Council or the City Administration redirect priorities. The estimated project costs are preliminary and are only intended to establish basic funding needs and are not considered engineer's estimates. Bridge conditions will be continually monitored during the six-year period and the plan will be adjusted as needed to best maintain the bridge infrastructure.

The funds programmed for the City Bridge Maintenance Contracts may also be used, wholly or in part, to support other projects listed in the six-year plan whose expenses exceed the preliminary estimations listed in the 6-year plan.

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		Program Expenses				Fund Split <sup>1</sup>			Estimated Remaining Funds
Carry-Over Local Funds	New Local Funds	Projects by Year Contract Awarded	Rating	Deck Area (ft <sup>2</sup> )	Estimated Total Local Proj. Cost	% Local	% Match	Outside Funding Secured	
\$2,350,000	\$1,000,000	<b>2014</b>							
		Bridge Inspection & Program Management	N/A		\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$300,000	100%	0%	N/A	
		TROD and Contract Maintenance Work	Various	Various	\$100,000	100%	0%	N/A	
		Kennedy Ave Bridge - Structural Repairs	4	9,723	\$150,000	100%	0%	N/A	
		County Bridge Maintenance Contract	Various	Various	\$100,000	100%	0%	N/A	
		Western Hills Via. - Utility Trough Removal/Repair	4	221,920	\$250,000	100%	0%	N/A	
		Western Hills Viaduct - R/W Acquisition	4	221,920	\$800,000	20%	80%	Yes	
		<b>Total Expenses</b>			<b>\$1,750,000</b>				<b>\$1,600,000</b>
\$1,600,000	\$1,000,000	<b>2015</b>							
		Bridge Inspection & Program Management			\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$300,000	100%	0%	N/A	
		TROD and Contract Maintenance Work	Various	Various	\$100,000	100%	0%	N/A	
		Western Hills Via.-Fracture Critical Inspection	4	221,920	\$50,000	100%	0%	N/A	
		Galbraith Road Bridge - Rehab	5	20,808	\$700,000	50%	50%	No	
		<b>Total Expenses</b>			<b>\$1,200,000</b>				<b>\$1,400,000</b>
\$1,400,000	\$1,000,000	<b>2016</b>							
		Bridge Inspection & Program Management	N/A		\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$300,000	100%	0%	N/A	
		TROD and Contract Maintenance Work	Various	Various	\$100,000	100%	0%	N/A	
		North Bend Rd Brg over Kirby - Deck Overlay/Painting	5	6,776	\$250,000	50%	50%	No	
		Marburg Avenue Bridge Replacement	4	6,156	\$400,000	20%	80%	Yes	
		<b>Total Expenses</b>			<b>\$1,100,000</b>				<b>\$1,300,000</b>
\$1,300,000	\$1,000,000	<b>2017</b>							
		Bridge Inspection & Program Management			\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$300,000	100%	0%	N/A	
		TROD and Contract Maintenance Work	Various	Various	\$100,000	100%	0%	N/A	
		Underwater Inspections	Various	Various	\$25,000	100%	0%	N/A	
		East Fork Bridge over LDC - Replacement	5	1,512	\$240,000	20%	80%	No	
		Western Hills Viaduct - R/W Acquisition	4	221,920	\$1,200,000	20%	80%	No	
		Western Hills Via.-Fracture Critical Inspection	4	221,920	\$50,000	100%	0%	N/A	
		<b>Total Expenses</b>			<b>\$1,965,000</b>				<b>\$335,000</b>
\$335,000	\$1,000,000	<b>2018</b>							
		Bridge Inspection & Program Management			\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$200,000	100%	0%	N/A	
		TROD and Contract Maintenance Work	Various	Various	\$100,000	100%	0%	N/A	
		Kennedy Ave Bridge over Conrail-Replacment	4	9,723	\$550,000	20%	80%	Yes	
		Western Hills Viaduct -Replacement 2	4	221,920	\$48,000,000	20%	80%	No	
		<b>Total Expenses</b>			<b>\$900,000</b>				<b>\$435,000</b>
\$435,000	\$1,000,000	<b>2019</b>							
		Bridge Inspection & Program Management			\$50,000	100%	0%	N/A	
		Project Design & Management	Various	Various	\$200,000	100%	0%	N/A	
		TROD and Contract Maintenance Work	Various	Various	\$100,000	100%	0%	N/A	
		Hopple St. Via. - Overlay and Expansion Joint Replace.	6	115,560	\$800,000	20%	80%	No	
		Anthony Wayne over Mill Creek - Painting	8	6,452	\$200,000	100%	0%	N/A	
		<b>Total Expenses</b>			<b>\$1,350,000</b>				<b>\$85,000</b>

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### 1

Additional leveraged funding will be pursued and will be used to supplement local funds as secured.

### 2

Replacement of the Western Hills Viaduct will be a major project and construction is expected to cost approximately \$240 million of which the total match is listed but not included in the summary. State and Federal funds will be sought, but a local match may be needed. Detail design is expected to cost approximately \$10 million. DOTE is pursuing acquiring matching funds but no such funds have yet been secured.



The projects are grouped by the year of expected bid. This plan is flexible and will be revised as necessary if future bridge inspections reveal unexpected changes in the condition of any bridge, if anticipated bridge funding amounts change, if unexpected leveraged funding sources become available or are withdrawn, if the timing of any bridge project requires adjustment to coordinate with other infrastructure improvement or development projects, or if City Council or the City Administration redirect priorities. The estimated project costs are preliminary and are only intended to establish basic funding needs and are not considered engineer's estimates. Bridge conditions will be continually monitored during the six-year period and the plan will be adjusted as needed to best maintain the bridge infrastructure.

The funds programmed for the County Bridge Maintenance Contracts may also be used, wholly or in part, to support other projects listed in the six-year plan whose expenses exceed the preliminary estimates listed in the six-year plan.